

**From:** [Schade, Pete](#)  
**To:** [Makus, Erik](#); [Lisa Kusnierz](#); [Yashan, Dean](#)  
**Subject:** RE: Bozeman stormwater summary  
**Date:** 03/29/2011 04:13 PM

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Erik – I was thinking of applying EIC reduction potentials to each [land use classification](#) (using HDRs values as a guide for general estimates), rather than applying EIC gains at the basin level. Would that not reduce runoff volumes from those land uses with modified EIC values, and allow routing of the pollutant loads. That is, we are reducing runoff volumes from specific land uses and then recalculating loading and routing of loads using the new (reduced) volumes. Does this work?

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Pete Schade  
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[Montana Department of Environmental Quality](#)

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**From:** Makus, Erik  
**Sent:** Tuesday, March 29, 2011 3:48 PM  
**To:** Schade, Pete; [Kusnierz.Lisa@epamail.epa.gov](mailto:Kusnierz.Lisa@epamail.epa.gov); Yashan, Dean  
**Subject:** RE: Bozeman stormwater summary

Pete,

I attached a copy with 'track changes' edits on it. A few minor things, and I added a section about EMCs in the modeling sections. Feel free to use as you see fit.

One or two comments:

1. E. coli should be a capital 'E', right? Regardless, I don't think we want to say anything about E. coli modeling – we just don't have enough data, and don't have the right model to do this, with or without EMCs. In my opinion, we should approach it differently than TSS, TN, and TP.
2. From a modeling perspective, the whole 'reduction in EIC' is going to be somewhat more complicated than stated in the memo. SWMM approaches pollutant load reductions through reductions at nodes, rather than through EIC modifications, which would be at the basin level. That is to say, it applies BMPs at locations X and Y, and these BMPs reduce the pollutant loading (and volumetric loading) at locations X and Y by user-defined amounts. While I could theoretically use reductions in EIC to do the model, I wouldn't know how to define them at first.

For instance, let's say a sub-development puts in a retention pond. I (the modeler) am not going to be able to say "oh that means 30% less EIC". I'm going to have to put in a retention pond, give it a 30% TN reduction and 70% TP/TSS reduction, and then run the model and see what it does for overall runoff/pollutant loading, and THEN determine the "EIC reduction" – basically, I'm going to start with the answer and work backwards so to speak.

Thus, the statements on page one and in section c. are kind of misleading. I deleted the

sentence on page one, but didn't do anything with section c. It should probably be modified.

I guess the whole reduction in IC thing is more for an ease of use perspective for planners and laymen; it doesn't correlate to the modeling world as easily. The end result might be the same, but the process is different.

Let me know if you have any questions about this!

Erik

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**From:** Schade, Pete  
**Sent:** Tuesday, March 29, 2011 11:22 AM  
**To:** Makus, Erik; kusnierz.lisa@epa.gov  
**Cc:** Yashan, Dean  
**Subject:** Bozeman stormwater summary

Attached is a summary of the stormwater assessment and WLA approach for the City of Bozeman's MS4 permit.

Please look it over before I send to the City of Bozeman, the Water Quality Protection District, and GGWC.

Edits?

P

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